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ABSTRACT

Part 1 of this paper considers conventional bilingual-bicultural programs, observing that there is still much need for improvement. According to the author, successful programs require adequate societal information; a clear understanding between school, home, and community; a satisfactory statement of basic program philosophy, rationale, goals, and objectives; a sound program design; provision for research; and a clear description and evaluation of the program at each stage for the benefit of other interested communities. Part 2 explores the field of early childhood, especially ages two to five, and finds implications for innovative bilingual-bicultural education. The paper points to evidence that in these early years children have a great though often untapped potential for learning in such areas as language, culture, art, music, literature, numbers, nature study, and human relations. It concludes that the best way to achieve a significant new advance in bilingual-bicultural education is to take full advantage of the prodigious learning potential of children between birth and age five. (Author/SK)

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BILINGUAL EDUCATION AND EARLY CHILDHOOD

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SUMMARY

BILINGUAL EDUCATION AND EARLY CHILDHOOD

by

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Educators are presently engaged in testing the hypothesis that under favorable conditions bilingual-bicultural schooling will improve the education of both bilinguals and monolingual Anglo children and at the same time will contribute to a healthier society.

In order that present types of programs--most often concentrated in the primary grades--may be of sufficient quality to confirm this hypothesis, we need: more and better societal information, a sound guiding educational philosophy, better program designs, greater provision for research, and more effective dissemination of basic information.

What is needed too is a totally new approach to bilingual-bicultural education, an approach suggested to us by students of early childhood development. It is the purpose of this paper to recommend that bilingual education be extended downward in order to tap what early childhood specialists agree is an extraordinary learning potential on the part of children between birth and age five.

Just as children introduced to music after the age of three find it increasingly difficult to develop absolute pitch, so children introduced to a new language and culture after age three find it increasingly unnatural to acquire a native accent and to feel culturally at home.

According to Benjamin Bloom[1] half of a child's total intellectual capability is developed by age four and 80% by age eight. The findings of Burton L. White[2] and his research team at Harvard have led them to change the focus of their study from age six to ages zero to three. J. McVicker Hunt[3] emphasizes the importance in this early learning period of providing environmental experience conducive to and synchronous with the child's intellectual

development. Buckminster Fuller[4] asserts that, "The child is not in fact taught and cannot be taught by others to inaugurate these capabilities. He teaches himself--if given the chance--at the right time." Maria Montessori discovered in children "sensitive periods" lasting almost to the age of five during which children have an extraordinary capacity for absorbing sense impressions from the environment, "periods...which, if they pass without bearing fruit, can never be replaced in their effects."[5] Allport[6] and Kluver[7] have studied children's amazing powers of memory, called "inventory memory" or "eidetic imagery," powers which enable children to reexperience a sensory stimulus in precise and vivid detail. Kornei Chukovsky has captured in his masterly little paperback entitled From Two to Five[8] children's precious gift of imagination expressed in words and pictures.

Especially impressive during early childhood is the development of language. In the words of Stevens and Orem, "It is generally acknowledged that between birth and about five years of age every normal child will learn to speak the native language or languages in the environment."[9] Montessori emphasizes the same point by remarking that "Only a child under three can construct the mechanism of language, and he can speak any number of languages if they are in his environment at birth."[10] Charles Osgood has found by recording the vocalizations of infants that "within the data for the first two months of life may be found all of the speech sounds that the human vocal system can produce."[11] Or consider the matter of vocabulary. In a study of children's active vocabulary Rinsland[12] used written sources supplemented by children's conversation to count 5,099 different words used by first graders out of 353,874 running words. And Mary Katherine Smith[13] has found that the recognition vocabulary of a six-year-old child is roughly four times as great. There is mounting evidence (Doman,[14] Stevens and Orem, and Söderbergh[15]) that children of two and three will learn to read, given the opportunity. And Montessori observes that "Children who are able to commence writing at the proper age (i.e., four and a half or five) reach a perfection in writing which you will not find in children who have begun to write at six or seven; but especially you will not find in this later stage that enthusiasm and the richness of production...."[16]

The implications are clear: During this early period a child should have a wealth of sensory-motor experience--visual, audial, tactile. This is the golden opportunity for him to hear many forms of music and memorable language, for memorizing, and for creating.

Assuming that a community wishes to maintain its non-English home language and cultural heritage and that it is persuaded by such evidence as we have sampled that ages zero to five are indeed most propitious for various forms of learning--two languages and cultures, art, music, literature, numbers, nature study, human relations--and that the benefits of the indicated educational changes exceed the costs, what are the best ways to approach such changes?

Nursery schools might well be bilingualized and biculturated if this can be well done. But the extension of bilingual-bicultural education into the home, provided families are receptive, holds out the greatest hope for education. Home visits by specially qualified bicultural teachers, play-tutoring of younger children by trained school-age children, the use of mobile classrooms, and television programs are but some of the many possible techniques.

Conclusion: The best way to achieve a significant new advance in bilingual-bicultural education is to take full advantage of the prodigious learning potential of children between birth and age five.

PART I - BILINGUAL EDUCATION

Introduction

Educators are presently engaged in testing the hypothesis that under favorable conditions bilingual-bicultural schooling will improve the education of both bilinguals and monolingual Anglo children and at the same time will contribute to a healthier society.

What are the conditions needed to assure programs of such quality that this hypothesis is confirmed?

There is general agreement on most of these prerequisite conditions: a socio-economic-cultural survey of the community contemplating a bilingual-bicultural program; participation by various sectors of the community in the planning and conduct of the program; clear-cut statements of philosophy, rationale, goals, and objectives; an adequate program design, including staff, curriculum, methods, materials, evaluation, provision for correction of program defects, provision for research, and an adequate description and publicizing of the program at each stage for the benefit of other interested communities.

Let us briefly consider each of these elements.

Need of Realistic Societal Information

As Fishman and Lovas point out,[1] "realistic societal information is needed for realistic educational goals." For example, "The school may attempt a program aimed at

language maintenance (e. g., developing high performance in all skill areas of mother tongue and second language, and promoting use of both languages in all major societal domains) in a community actually in the process of language shift. Thus, the school's efforts could be cancelled out because it did not take account of community values or preferences.... Conversely, the school may attempt a program aimed at language shift (e.g., developing competence in the second language only and extending its use to all major domains) for a community determined to maintain its own language in many (or all) societal domains. Again the school could fail (or achieve very limited success) because it ignored the sociolinguistic dimension of the problem.... Even if the school program and community objectives are fortuitously congruent, the school program may not take account of important characteristics of the speech community, e.g., (a) the existence of one or more non-standard varieties (in one or more languages) whose school appropriateness as a medium or as a subject must be ascertained by the speech community itself; (b) differential use of these varieties by members of the speech community from one societal domain to another and from one speech network to another. Schools often adopt simplistic notions, e.g., that there is only one real kind of Spanish and one

real kind of English and that everyone everywhere uses (or should use) this one kind. Such notions are obviously untrue."

Fishman and Lovas maintain the principle that "public schools should belong to parents, to pupils, to communities." And Bruce Gaarder suggests[2] that the structure of a program will be largely determined by the way a community goes about establishing it.

Fishman and Lovas propose the following minimal information as essential to appropriate decisions about a bilingual program:

> "1. A survey that would establish the languages and varieties employed by both parents and children, by societal domain or function.
>
> "2. Some rough estimate of their relative performance level in each language, by societal domain.
>
> "3. Some indication of community (and school staff) attitudes toward the existing languages and varieties, and toward their present allocation to domains.
>
> "4. Some indication of community (and school staff) attitudes toward the changing and existing language situation."

As important as this sociolinguistic information is the economic factor. The Bilingual Education Act is, unfortunately but necessarily, poverty legislation, focused on the needs of families whose income is limited to $3,000. I say "unfortunately" because the educational needs of bilinguals

are by no means restricted to the lowest income levels. But we must add the word "necessarily," for who will deny that it is the lowest-income families that have the greatest need and therefore the first right to public assistance. Title VII programs are required to make a population-income survey, but local or state-supported program planners also need to appraise costs and benefits in order to assure themselves of community support. Nothing could be more vital or more delicate than this aspect of educational planning. If a study committee presents a realistic estimate of costs and only a vague estimate of benefits, the community is likely to vote down a bilingual program--unless, of course, the federal government underwrites the cost. If, on the other hand, the committee presents a glowing picture of benefits and only a vaguely reassuring estimate of costs, initial acceptance may be followed by later disillusion and possible collapse of the program.

Planners of programs that are intended to be bicultural as well as bilingual cannot well afford to omit the cultural component from their community survey, for it is culture, including language, which gives the individuals of a community a fellow feeling and it is a community's cultural heritage which constitutes its collective memory, linking the past to the present. The preservation of this cultural heritage

and of this fellow feeling is as important as are the maintenance and cultivation of the home language. Indeed it is vastly more important, for a whole traditional sense of values and a whole life style are involved, which are all reflected in language but which also transcend language.

Elements of such a cultural survey might be the following: make-up of the family, both core and extended; place of birth, residence, and schooling of older family members; organization and activities of the family; occupation and vocational and avocational skills and interests of various members of the family; the place of conversation, telling of stories or jokes, reading, singing or instrumental music, pictures or art objects; worship; meals; use of after-dinner time, Saturdays, Sundays, vacations, holidays, feast days; play, games and athletics (in the family, neighborhood, school); etc. This list is merely suggestive; the collaboration of a cultural anthropologist or sociologist, preferably a member of the non-English speech community, would be necessary to design a satisfactory instrument and to conduct the survey. (For suggestions concerning the use of sociolinguistic instruments see Fishman et al.[3])

The use of a socio-economic-cultural survey serves a double purpose. Not only does it provide societal information which is essential for realistic educational planning; it

also serves to make the community conscious of issues which need to be understood before a bilingual-bicultural program is undertaken.

One or two examples may help to show the educational value of such a survey. Take the simplistic and false notions concerning 'real' English and 'real' Spanish which are so widespread. A planning committee must provide a simple but scientific explanation of the nature of language and of its varieties if it is even partially to avoid a harvest of false assumptions and prejudices. Or take the popular misconception that the learning of more than one language places an intolerable burden on a child or that learning to read first in the home language may delay the learning of reading in English. If such misapprehensions are not dispelled by a few well chosen examples, the results of the survey may well be totally misleading. I don't mean to say that a citizen does not have a right to his prejudices, but he should at least have to vote his prejudices after being exposed to the best available information.

Community Participation

If "public schools should belong to parents, to pupils, to communities," how may this principle best be implemented? The school board has the legal authority to represent the community but has neither the time nor the specialized knowledge

to decide all by itself whether or not to approve a bilingual-bicultural program. Its normal first step is to appoint a broadly representative citizens' committee to study the question and to make recommendations to the board. In the previous section of this paper we assumed that such a step had been taken and that the study committee needed to gather information by means of a socio-economic-cultural survey. It would be natural for such a committee to observe ongoing programs as well as to seek the advice of specialists outside of the community.

Let us now assume that the study committee has found good reasons--positive support by both the community and the educational staff, willingness by the taxpayers to shoulder the extra financial burden, availability of specialized staff personnel and other resources -- to recommend approval of a program and that the school board has voted its approval. At this point the school board would be well advised to convert the study committee into an advisory committee or to designate a new committee to advise the board, the superintendent, the director of instruction, and the director of the bilingual-bicultural program, who ought now to be appointed as soon as possible along with bilingual teachers and other bilingual specialists.

This is a critical moment. If the study committee has

done its work well, that is, has calculated accurately what it will take in money and other resources to launch and maintain a quality program, the advisory committee now inherits the same responsibility and must spare no effort or expense to assure the appointment of qualified personnel capable of planning, launching, and maintaining a model program. One weak link in the chain may be enough to spell failure. There is no room in such an operation for self-promotion or conflict; support of each by all is indispensable; nor can anyone lose sight for a moment of the program goals: the best possible education for each individual child and the enhancement of the general good of the community.

The advisory committee may wish to divide the labor. Each member can become a kind of specialist but without losing touch with the other committee members, the bilingual program director and other school administrators, and the school board. In serving as an advisory liaison agent between the school and the community, one member may wish to specialize in public relations, another in identifying resource persons in the community -- story-tellers, musicians, artists, magicians, poets, orators, politicians, scientists, carpenters, classroom aides, etc. -- another in visiting other programs in search of useful ideas, another in visiting mothers and helping them with the informal education of preschool children, another in dealing with the problem of inadequate nutrition, another

in helping to build a better self-concept, another in combing the research literature for useful suggestions, another in designing research problems, another in carrying on a running conversation with one or more arch critics of the program, another as legman for the bilingual director, another as hunter of good materials. The tasks sound interminable, and indeed they are. If they all fall on the bilingual director, he is soon overwhelmed. By sharing them with his staff and the members of the advisory committee he makes them more nearly tolerable. There is more to do than even the advisory committee can hope to do on a part-time basis. Hence the desirability of finding in the community men and women and boys and girls willing to share the tasks.

In this way it is possible to shorten the distance between the home and the school, to extend the school into the community, to reduce the intolerable burden on the teachers and school administrators, to give some reality to the principle which states that "public schools should belong to parents, to pupils, to communities," and to create a feeling of joy in the community over a community job well done.

Philosophy, Rationale, Goals, and Objectives

Statements concerning these basic subjects will necessarily differ from project to project, but they normally reflect the viewpoint of the director of bilingual-bicultural education working under the constraints inherent

in the local situation.

The statement of philosophy will reflect his self-concept, which in turn will affect his conception of the situation in which he finds himself. Self-confidence is likely to beget a bold and imaginative view of his mission. Self-respect leads to a generous regard for others. Knowing that he himself is the product of a particular ancestry and environment, that parents, family, teachers, friends, and others have had a hand in molding his character and personality, he realizes that he in turn has the great opportunity of guiding a generation of youngsters to realize their potential. His success will be compounded of love, respect -- even reverence -- understanding, imagination, hard work, all of which will directly or indirectly contribute to his statement of the program philosophy.

In establishing a rationale for bilingual education, one must ask whether bilingualism is desirable or undesirable for the nation and for the individual child.

As we remarked in our monograph on Bilingual Schooling in the United States,[4] "For the United States of America in this latter half of the twentieth century the question of desirability for the nation seems almost rhetorical. America's relations, official and unofficial, with almost every country in the world, involving diplomacy, trade,

security, technical assistance, health, education, religion, and the arts, are steadily increasing. The success of these international relations often depends on the bilingual skills and cultural sensitiveness of the American representatives both here and abroad. In our country, as in every important nation, educated bilingualism is an accepted mark of the elite, a key which opens doors far and wide. It seems clear to us that bilingualism is highly desirable for the nation.

"Is Bilingualism Desirable or Undesirable for the Individual Child? If the individual child belongs to a high socioeconomic class, the answer is obvious. As in other countries, the elite considers knowledge of other languages essential for participation in international affairs. To argue that children of lower socioeconomic classes will never need to use other languages is in effect to deprive them of the opportunity to become eligible for such participation. In the case of American children who are born into a non-English language, not to give them the education needed to perfect their first language to the point of usefulness amounts to a virtual betrayal of the children's potential. As Bruce Gaarder has said,[5]

"The most obvious anomaly -- or absurdity -- of our educational policy regarding foreign language learning is the

fact that we spend perhaps a billion dollars a year to teach languages--in the schools, the colleges and universities, the Foreign Service Institute, the Department of Defense, AID, USIA, CIA, etc. (and to a large extent to adults who are too old ever to master a new tongue) -- yet virtually no part of the effort goes to maintain and to develop the competence of American children who speak the same languages natively....'"

For the individual child, of whatever socioeconomic class, bilingualism is clearly desirable, just as it is for the nation.

Each community must of course decide for itself whether bilingual schooling is worth the trouble and expense. If the answer is affirmative, it must next decide between a maintenance-type or a transfer-type program. Indeed Fishman and Lovas [1] distinguish four types of program: Type I, Transitional Bilingualism, in which the home language is used in the early grades until the pupils' skill in English is developed to the point that it alone can be used as the medium of instruction; Type II, Monoliterate Bilingualism, which aims at the development of audiolingual skills in both languages but of literacy only in English; Type III, Partial Bilingualism, which aims at fluency and literacy in both languages but restricts literacy in the mother tongue to

certain subject matter, usually that related to the ethnic group and its cultural heritage; and Type IV, Full Bilingualism, which aims at developing all skills in both languages and in all domains.

In addition to reflecting the enlightened point of view of the community the statement of rationale should deal with such topics as the development of the children's self-concept, the best medium for learning, the best order for learning language skills, the relation of language and culture, the factor of age, etc.

Each of these topics deserves full treatment, but to save time let me instead list ten propositions, taken largely from our monograph on bilingual schooling, which suggest the possible content of a statement of rationale.

1. American schooling has not met the needs of children coming from homes where non-English languages are spoken; a radical improvement is therefore urgently needed.

2. Such improvement must first of all maintain and strengthen the sense of identity of children coming from such homes and the sense of dignity of their families.

3. The child's mother tongue is not only an essential part of his sense of identity; it is also his best instrument for learning, especially in the early stages.

4. Preliminary evidence indicates that initial learning through the child's non-English home language does not hinder learning in English or in other school subjects.

5. Differences among first, second, and foreign languages need to be understood if learning through them is to be sequenced effectively. Under favorable conditions the second language can serve satisfactorily as the primary medium of instruction.[6]

6. The best order for learning the basic skills in a language -- whether first or second -- needs to be understood and respected if best results are to be obtained; this order is normally, especially for children: listening comprehension, speaking, reading, and writing. It should be understood, however, that effective teaching calls for considerable overlapping, especially between listening comprehension and speaking and between reading and writing. And all four skills are mutually reinforcing.

7. Young preschool children have an impressive learning capacity, especially for learning language or languages. Young children apparently learn more easily and better than adolescents or adults the sound system, the basic structure, and vocabulary of a language, and even the basic skills of reading.[7]

8. Bilingual schooling is not only the learning of two languages; it is using two languages as mediums for learning the full range of school subjects.

9. Just as language is only a part, although an important part, of culture, so bilingual education should be thought of as only a part of bicultural education.

10. Bilingual-bicultural education holds the promise of helping to harmonize the various ethnic elements in a community by fusing them into a mutually supportive and creative pluralistic society.

Like the statements of philosophy and rationale, the statement of goals and objectives must be in accord with the informed and conscious desires of a particular community. Within these limits, then, the goals of a bilingual-bicultural program might be:

1. To so use two languages as to achieve the most effective learning by all children in any part of the curriculum.

2. To encourage all children, each at his own best rate, to cultivate their first language fully: to develop skill in all the language arts--listening comprehension of several varieties of the language, speaking in several registers, memorizing, reading (both aloud and silently), and writing (including handwriting, typing, spelling, punctuating, and composing).

3. To encourage all children to develop fully their second language, each at his own best rate of learning.

4. To enable all children to gain a sympathetic understanding of their own ethnic history and culture and of the history and culture of other ethnic groups.

In summary, to give all children the opportunity to become fully articulate and literate and broadly educated in two languages and sensitive to two cultures.

There has developed a lively controversy over so-called behavioral or performance objectives, much of it due in my opinion to a misunderstanding of the principle or to a too mechanistic implementation of the principle. To me it seems reasonable for a teacher to describe in advance and in considerable detail expected results of instruction, in terms of student behavior or performance. To the extent possible, students themselves should be involved in this as in other aspects of the preplanning. A useful procedure would be for the teacher to show a class at the beginning of the year a videotape of the previous class, showing typical performances at the end of the year. It is also essential that the teacher explain the proper use of tests, as ways of measuring the effectiveness of the group planning and performance, not merely as a way for the teacher to assess, somewhat punitively, undefined student performance.

<u>Program Design: Staff, Curriculum, Methods, Materials, Evaluation, Provision for Correction of Program Defects</u>,

Provision for Research, and Program Description

An adequate bilingual-bicultural program, designed to reflect the philosophy and rationale endorsed by the community and to implement the adopted goals and objectives, should include a competent and committed staff; a program which has been collaboratively preplanned and is conducted and evaluated cooperatively by teachers, other staff, and students; provision for correcting program defects as soon as they are detected; one or more research projects; a written description of the program at each stage for the benefit of other interested communities.

For suggestions concerning the curriculum I refer you to Chapter VI, Volume I, of our Bilingual Schooling in the United States and to the very useful Handbook on Bilingual Education by Muriel Saville and Rudolph Troike.[8]

Concerning methods I believe we still have much to learn. Judging by some of the classes I have seen, our teaching on the one hand is not yet imaginative or interesting enough and on the other not challenging enough. Teachers, especially of young children, need to have and to show a zest for living and learning and imagination enough to understand what interests children. And we need to understand that certain forms of learning which seem difficult to us grown-ups--like languages,

for example--can be easy and pleasurable for children. We also need to realize how much can be taught and learned indirectly. Language or number concepts embedded in songs or games are more digestible than they would be in direct drills.

As with methods so with materials we are as yet badly underdeveloped, but thanks to the work of the Materials Acquisition Project and its three partners in Stockton, Austin, and Miami, and thanks also to the increased activities of publishers, bilingual programs will soon have an increasingly wide choice of materials. The National Dissemination Center for Bilingual-Bicultural Education in Austin specializes in evaluating, editing, and disseminating materials developed by bilingual program staffs. The Spanish Curricula Development Center in Miami is busy elaborating materials in several subjects and in several varieties of Spanish. The Stockton Multilingual Assessment program is trying to overcome our deficit in evaluative instruments appropriate for bilinguals. And the Materials Acquisition Project in San Diego, California is acquiring, evaluating, and publicizing appropriate materials from all parts of the Hispanic World.

The relative lack of research in bilingual programs is a serious shortcoming, which results in duplication and waste of effort. If a hypothesis is tested at all, it may not be

adequately formulated. The variables may not be adequately controlled. And results, even if significant, may not be adequately reported. School boards and administrators tend to consider only the cost of research and not the benefits. The result is that teachers, required to work full time or overtime on the routine aspects of their work, have no time or energy left to think about how to improve the quality of education. If we are ever to make bilingual-bicultural education really professional, we must reserve a significant place in our programs for carefully conducted research.

And, finally, significant features and results of all bilingual-bicultural programs should be recorded in ERIC for the benefit of other workers in the field.

PART II - EARLY CHILDHOOD

Introduction

I have up to this point sketched some of the salient features of a good conventional bilingual-bicultural program. Now I should like to consider some of the findings of specialists in early childhood and the possible implications of these findings for bilingual-bicultural education.

I make no pretense to competence in this field, for I am neither a linguist, nor a psychologist, nor an anthropologist, nor a specialist in early childhood. I am merely a language educator who has become fascinated with my desultory reading in this field and been made conscious of the fact that my field touches other fields. As a result of this reading and of my own and others' experiences I have developed a few hunches concerning some of the good things that can result from this contact of fields which, though cultivated by different specialists, are clearly related. Let us consider a few of the features of early childhood development which appear to have a bearing on bilingualism and biculturalism.

The Child's Early Intellectual Development

According to Benjamin Bloom, 50% of a child's total capacity to develop its I.Q. is realized by age four. By age eight a child is said to have activated 80% of his total capability to self-improve. By age thirteen, 92% of this

capability is self-started into usability, and by age seventeen the final 8% of the total capacity to apprehend, coordinate, comprehend, and use information has become operative.[9]

The findings of Burton L. White and his research team on the Pre-School Project have led them to change the focus of their study from age six to ages zero to three.[9a] Buckminster Fuller writes, "Man, through electro-probing of the human brain, is beginning to understand something of its energy patterns and information processing. We apparently start life with a given total brain cell capacity, component areas of which are progressively employed in a series of events initiated in the individuals brain by chromosomic 'alarm clocks.' Put your finger in the palm of a newborn baby's hand and the baby will close its tiny hand deftly around your finger, for its tactile apprehending organism is operative in superb coordination. Soon the 'alarm clock' calls the hearing function into operation, and on his own unique schedule the baby will also see."[10]

Fuller continues: "In a stimulating environment, the brain's chromosomic alarm clocks and 'ticker tape' instructions inaugurate use of the child's vast inventory of intercoordinate capabilities and faculties. The child is not in fact taught and cannot be taught by others to inaugurate these capabilities. He teaches himself--if given the chance--at the right time. This provision of environmental experience conducive to the child's intellectual development has been termed the 'problem

of the match' by J. McV. Hunt, in his Intelligence and Experience .... If not properly attended to and given a chance to function... the brain mechanisms can be frustrated and can shut off the valves of specific capacities and capabilities to learn, then or later on, in the specific areas. The capabilities need not necessarily be employed to an important degree immediately after being triggered into inception, but must upon inception be put in use and kept in use as active tools in the human coordinating capacity, else they will squelch themselves, 'shut themselves off,' not necessarily irreparably, but usually so."[10]

Early Development of the Senses

Montessori too discovered what she called "sensitive periods" in a child, times of special receptivity to certain learnings. "Thus, in the early acquisition of sense impressions... there are periods in childhood which, if they pass without bearing fruit, can never be replaced in their effects."[11] According to Montessori, the child has a long sensitive period, lasting "almost to the age of five," during which he has "a truly prodigious capacity" for "possessing itself of the images of the environment."[12] His sensitivity during this period "leads him to absorb everything about him."[13]

Memory

Related to this extraordinary development of the senses

is an equally amazing memory. "... all children appear to have special powers of memory and though the exact nature of these powers is not known, in general it seems that infants manifest a type of 'inventory memory.' This faculty has been called 'eidetic imagery' by the psychologists who have studied it.[14] The child appears to have the power to reexperience a sensory stimulus in precise and vivid detail. Shown a picture, some of the children tested have been able to describe it in minute detail hours or even months later. Allport has suggested that this eidetic imagery enables the brain to elaborate sensory experience, and through this repetition perfect its own perceptual and adaptive responses. Even though the function of this special memory aptitude in babies is not completely understood, it is clearly related to the child's language faculty and like that faculty tends to diminish after five years of age."[15]

The implications are clear: During this early period a child should have a wealth of sensory experience, visual, audial, tactile. This is the golden opportunity for the child to hear many forms of music and memorable language. The memorizing of poetry at this stage serves not only to store the memory with passages that the adult can later recall with pleasure or use with special effect; it triggers the memorizing faculty, which if maintained can serve the individual permanently.

Imagination

Another precious gift of childhood is imagination, and for one of the best treatments of this gift we turn to the late Kornei Chukovsky, a poet of childhood, an observer of children, and the most loved author of books for children in the Soviet Union, who died in 1969, at the age of eighty-seven. His masterly little paperback entitled From Two to Five[16] is full of the charm and the wisdom of childhood. The title of the book marks Chukovsky as one of the small band of devotees to young children. In his first chapter, which he titles "A Linguistic Genius," he shows "how vast, varied, and complex is the mental effort that the child from two to five years of age makes in the course of mastering his native tongue." (p. xvi) In the chapter "The Tireless Explorer," he reveals some of the many processes by which the child becomes aware of the world. About his chapter on "Children and Their Poetry: How Children Make up Verse," Chukovsky comments, "Although the child does not exist who, between the ages of two and five, does not reveal a predilection for poetry, this area of his intellectual activity and tastes has so far remained unexplored." (p. xvi) "'The Sense of Nonsense Verse' is a chapter dedicated to that very curious genre of children's

folk rhymes which, for lack of a ready-made term, I have called 'topsy-turvies.'" (p. xvi)

Let me give a few of his examples of children's inventions, cleverly reinvented in English by the translator, Miriam Morton:

> When Lialia was two and a half year's old, a man whom she did not know asked her:
> "Would you like to be my little daughter?"
> She answered haughtily: "I'm mother's and no other's." (p. 1)

> It cheered me up to hear a three-year-old little girl mutter in her sleep: "Mom, cover my hind leg!" (pp. 1-2)

> "How dare you pick a fight?" the mother scolded.
> "Oh, Mommie, what can I do when the fight just crawls out of me?" (p. 3)

> When it is day here, it is night in America.
> Serves them right, those capitalists! (p. 54)

> Three-year-old Galia invented this game: "Mother, say 'clumsy.' -- "Clumsy." -- Galia rhymes: "Mumsie."
> "Mother, say 'Llama.'" -- "Llama." -- Galia giggles and rhymes: "Mama."
> "Mother, say 'salami.' -- "Salami." -- Galia roars with laughter: "Mommie." (pp. 62-63)

> He rode on a dappled wagon
> Tied to a wooden horse. (p. 93)

> The village rode
> Past the peasant. (p. 93)

> He sat with his back to the front
> As he rode off to the hunt. (p. 93)

And, finally, two brief quotes from Chukovsky:

> It took hundreds of years for grownups to realize that children have the right to be children. (p. 111)

> It is not hard for one to become an idiot when he is robbed of his childhood! (p. 110)

Another expression of the imagination of children are the drawings interspersed throughout Chukovsky's book. The author selected from his vast collection of children's drawings some fanciful representations of animals, human figures, or nature, one for the beginning and one for the end of each chapter, with an extra added here and there. As a cover decoration he used a fierce mustachioed figure with ten legs marching off in all directions and ten strands of hair standing up as from a crown. This was drawn by a little girl who created the word Zakaliaka (derivative from the Russian word for 'cripple') to describe what she drew. So art joins literature to illustrate the imaginative creativity of the child from two to five.

Early Language Development

"It is generally acknowledged that between birth and about five years of age, every normal child will learn to speak the native language or languages in the environment. By the age of five, authorities agree, this child will have substantially mastered the basic patterns of his language. Within the limits of his experience he will understand and express basic ideas in his native tongue, and his grammatical expression will be functionally correct."[17] Montessori remarks that "the mind during this period is in a phase

of activity regarding everything that has to do with words."[18]

Take the matter of speech sounds. After studying the recorded vocalizations of an infant in the first year of life, Charles Osgood asserts that "The first observation of note was that within the data for the first two months of life may be found all of the speech sounds that the human vocal system can produce."[19]

Or consider the subject of vocabulary. The rate of a child's vocabulary acquisition is a constant source of amazement to grownups, whose learning of words has by comparison almost come to a halt. For example, Mary Katherine Smith, using the Seashore-Eckerson English Recognition Vocabulary Test,[20] found that for grade one, the average number of basic words known was 16,900, with a range from 5,500 to 32,800.... For grade one the average number of words in the total vocabulary (basic plus derivative words) was 23,700, with a range from 6,000 to 48,800."[21] In a study of children's active vocabulary Rinsland used written sources supplemented by children's conversation to count 5,099 different words used by first graders out of 353,874 running words.[22]

Early Bilingualism and Multilingualism

Apparently children also have a remarkable ability

to learn more than one language. For example, Montessori declares that "Only a child under three can construct the mechanism of language, and he can speak any number of languages, if they are in his environment at birth."[23]

Almost everyone has had personal experience or has known someone who has had personal experience with children in a bilingual setting who have apparently without effort acquired more than one language. Many such cases have also been recorded or described.[24]

An oft-cited case of multilingualism is the one described by the British psychologist J. W. Tomb:[25]

"It is a common experience in the district in Bengal in which the writer resided to hear English children three or four years old who have been born in the country conversing freely at different times with their parents in English, with their ayahs (nurses) in Bengali, with the garden-coolies in Santali, and with the house-servants in Hindustani, while their parents have learnt with the aid of a munshi (teacher) and much laborious effort just sufficient Hindustani to comprehend what the house-servants are saying (provided they do not speak too quickly) and to issue simple orders to them connected with domestic affairs. It is even not unusual to see English parents in India unable to understand what their servants are saying to them in Hindustani and being driven in consequence to bring along an English

child of four or five years old, if available, to act as interpreter."

Early Reading and Writing

Fuller writes in his prologue that "In The Case for Early Reading, the authors have assembled considerable and convincing evidence that the preschool child (Why not call him the 'school-at-home' child?) wants to and will learn to read at home given the opportunity.

"Their argument that the 'before age six' period is the naturally optimum time for language learning--reading included--is increasingly supported by recent research disclosures in diverse disciplines which, coupled with the historical evidence cited, merits the closest consideration."[26]

Montessori observes that "Children who are able to commence writing at the proper age (i.e., four and a half or five years of age) reach a perfection in writing which you will not find in children who have begun to write at six or seven; but especially you will not find in this later stage that enthusiasm and the richness of production."[27]

It was Glenn Doman who first made me aware of the young child's reading capacity. In his book on How to Teach Your Baby to Read: The Gentle Revolution,[28] he

writes: "Children can read words when they are one year old, sentences when they are two, and whole books when they are three years old--and they love it." And in a paper prepared for the Conference on Child Language held in Chicago in November 1971 he describes how he and his colleagues came to make this same discovery while working with brain-damaged children. I'll read his first three short paragraphs.

"When you are confronted with a brain-injured two year old who is no further advanced than a newborn babe--who gives no evidence of being able to see or hear, let alone crawl or raise his head--teaching him to read isn't the first thing you think about, what you think about is how to get through to him, by any method, on any level.

"Young Tommy was such a child. His eyes wouldn't follow you, or follow a light, or work together. A loud noise wouldn't make him start. You could pinch him and get no reaction. In fact, the first time we ever got a reaction out of Tommy was when we stuck pins in him: he smiled. It was a great moment, for us and for him. We had established contact.

"That was when Tommy was two. By the time he was four he was reading, and thereby hangs a tale. Let me tell it to you just as it happened, because we didn't set out to

teach him to read; it just happened along the way, as part of our overall problem of establishing communication."[29]

Shortly after discovering Glenn Doman's book, I received a letter from Professor Ragnhild Söderbergh, a linguist in the University of Stockholm, telling me that she was teaching her two-year-old daughter to read, using the Doman method. Later she reported her success in accomplishing this in a fourteen-month period, starting when her daughter was two years four months old and ending when the girl was three years six months old. The story is related in English in her book entitled Reading in Early Childhood.[30]

Judging by Stevens and Orem's The Case for Early Reading, children's ability to learn to read between ages two and five is common knowledge to those "in the know." And gradually this knowledge is penetrating official circles.

The California Report

Apparently the California State Superintendent and Department of Education have been sufficiently impressed by the mounting evidence of the young child's great learning capacity to propose, in a soundly reasoned report, lowering the school-beginning age to four, on a voluntary basis.[31] This has in turn triggered a reaction by certain students of early childhood who fear the effect of this on both children and their families and who point to the enormous cost of such a proposed program.[32]

Personally I applaud such an official recognition of young children's learning capacity. At the same time I would hope that some of the educational changes that are called for could take place in the home rather than in school.

Educational Changes

Assuming (1) that a community wishes to maintain its home language and its cultural heritage and (2) that it is persuaded by such evidence as we have sampled that ages two to five are indeed most propitious for various forms of learning--two languages and cultures, art, music, literature, numbers, nature study, human relations--and (3) that the benefits of the indicated educational changes exceed the costs, what would be some of the best ways to approach such changes?

A Home-Oriented Preschool Education Model

One suggestive model is that described by Roy Alford of the Appalachia Educational Laboratory, Inc., at the Conference on Child Language held in Chicago in November 1971.

This program "is predicated on the assumption that there is a high positive correlation between formalized preschool training and later performance in school and in society.... The strategy for the achievement of the objectives of the

Appalachia Preschool Education Programs has been the development of a child-centered, home-oriented program to be delivered by means of television broadcasts, home visitations, mobile classrooms, and other media. It has involved building a curriculum based on behavioral objectives and preparing materials and methods particularly appropriate for children of three, four, and five years of age living in rural Appalachia."[33] Summarizing evaluation of the first year of the field study, Dr. Alford reported that "The results from the first year indicated gains for the mobile classroom/home visitor group (Treatment 1) and the television/home visitor group (Treatment 2) on areas of the ITPA most related to program objectives, such as verbal fluency and the ability to make coherent descriptive statements about physical objects. Also, the T_1 group exhibited gains on certain subtests of the Frostig which indicated increased figure-ground and embedded figure discrimination, both of which skills are thought to be highly related to reading readiness. However, no consistent pattern of gain for T_1 and/or for T_2 was observed as a result of the first year's field test."[34]

The second year's summative evaluation "indicated that children who experienced the program have increased language

development and cognitive learning, greater psychomotor and social skills development, and that the parents have a favorable attitude toward the ECE intervention. The cost of the program was found to be approximately one-half that for the standard kindergarten program."[35]

The concluding paragraph of Dr. Alford's report is worth quoting: "The Appalachia Educational Laboratory Early Childhood Education Program was developed for the rural child. It can, however, be used in many areas of the United States where children are not presently being reached by existing preschool programs. Multi-ethnic groups have been identified as possible recipients, as have isolated American Indians, bilingual children, Chicanos, migrants, rural southern blacks, and mountain children. All of these might be characterized as children who seldom are encouraged to develop healthy self-concept and pride in their cultural heritage."[36]

Conclusions

It is time to draw our conclusions.

In Part I of our paper we considered what might be called conventional bilingual-bicultural programs and observed that even in this type of program there is much room for improvement. The planning of a soundly based and high quality program

requires adequate societal information; a clear understanding between school, home, and community; a satisfactory statement of basic program philosophy, rationale, goals, and objectives; a sound program design; provision for research; and a clear description and evaluation of the program at each stage for the benefit of other interested communities.

In Part II we explored, albeit superficially, the field of early childhood, especially ages two to five, and found implications for innovative bilingual-bicultural education.

We found extensive evidence that in these early years children have a great though often untapped potential for learning in such areas as language, culture, art, music, literature, numbers, nature study, and human relations.

It appears that during this favorable learning period children respond not so much to teaching as they do to stimulating learning situations. There is evidence that areas of learning which are initiated at this early age may in a favorable environment continue. Thus, for example, early reading and writing may well result in permanent gains. A stimulating environment may also enable children to develop a lasting taste for art, music, and literature. One can

readily foresee a great burgeoning of Chicano literature and allied arts as a result of such favorable early educational conditions.

To what extent such early bilingual-bicultural education should be institutionalized is an open question. Nursery schools might well be bilingualized and biculturated, provided this can be well done. I see even greater prospects for upgrading bilingual-bicultural education by extending it into the home, provided families are receptive and able to cooperate. We might well explore a system of play-tutoring of younger siblings by older children and elaborate the suggestions contained in the Appalachia Early Childhood Education Program: developing television programs--or utilizing those already in existence, like Carrascolendas--conducting home visits, and using mobile classrooms. The experience of the Appalachia Educational Laboratory indicates that these developments may not be prohibitively expensive. In any case they hold out the prospect of benefits greatly exceeding the costs.

My conclusion then is that the best way to achieve a significant new advance in bilingual-bicultural education is to take full advantage of the prodigious learning potential of children between birth and age five.

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